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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
KNEPPER, DAVID D

ART UNIT	PAPER NUMBER
2654	8

DATE MAILED: 01/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/297,038	SEYA	
	Examiner	Art Unit	
	David D. Knepper	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 24-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 24-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 Apr 1999* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. Applicant's correspondence filed on 29 October 2002 (paper #7) has been received and considered. Claims 1-12 and 24-30 are pending. Claims 13-23 and 31-52 have been canceled.

Abstract

2. The Abstract of the Disclosure is objected to because it covers material that is not supported by the specification. The abstract indicates that that the invention will separate musical, vocal input into language (presumably, the lyrics) and accompaniment information (presumably, the musical score). The invention then purports to translate the vocal (lyrics) and produce a second vocal output, which is a translated version of the input. Correction is required. See M.P.E.P. § 608.01(b).

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the information that is being processed must be shown or the feature(s) canceled from the claim(s). For example, the "vocal information", "accompaniment", "language lyric" and "musical information." The drawings fail to show how any type of data separation is performed. The drawings must show the data input relied upon as well as the method for processing the data to achieve the desired result commensurate with the description and claims.

No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claims

4. Claims 1-12 and 24-30 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 24 are rejected as noted below.

The claims are confusing because they fail to specify what type of information they intend to process. The input is not defined nor is the manner of "separating a first vocal information part in a first language and an accompaniment information part from first vocal containing musical information."

"Generating the first language lyric information by speech recognition of the first vocal information" indicates that someone speaks the lyrics into the device. From the antecedent reference of the separation unit, the lyrics must be derived from speech. However, the accompaniment is not limited to any particular "musical information", be it vocal, instrumental or otherwise. This contradicts the specification such as page 23 which indicates that some unique form of karaoke information is required as a substitute for standard stereo audio such as left/right (L/R) and center information that is normally used for some types of stereo coding. Confusion exists because the claims and the specification fail to provide reasonable antecedent basis to form a meaningful relationship for interpretation of the claims.

The claims are broad enough to include the separation of any speech from any input audio. For example, this would include choral music and the separation of a typical 4-part (SATB) harmony into the desired lyrics of one or more parts (the lyrics could vary among parts). Other possibilities would include one or more singers accompanied by a band or orchestra in which separation of parts could be much more complicated between singers, instruments and/or accompaniment parts. However, the "vocal separation unit 212" is described on page 23 as including "vocal canceling unit 212a" which contains a digital filter capable of erasing the vocal part. It is unclear what relationship between "vocal information", "accompaniment information" and "musical information" is established and how the relationships should be defined and/or separated.

It is unclear whether the claimed "language lyric information" is part of the "vocal information D3 or the karaoke information D2" (page 23, line 18). The combination claimed fails to provide an antecedent basis for a clear relationship to the specification.

It is unclear whether the applicant intends to limit the invention to musical related information or whether the combination of data can include a wider variety of multimedia information. Therefore, the separation of data is interpreted to be broad enough to include various types of information known in the art.

The only specific application mentioned in the specification is for karaoke related data. However, neither the specification nor the claims clearly describe any particular requirements for data structure or data format for karaoke devices and/or methods for using karaoke devices.

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-12 and 24-30 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification on page 6 indicates that "the required information" is not particularly limited but may include various data "such as audio information, text information, image information or the picture information as later explained..."The specification fails to limit the information to any particular format or combination of data. This makes it unlikely that one of ordinary skill in the art could hope to predict how to process the data. The desired result of the processed data is similarly vague.

The transmission method is not limited to any particular format. On page 8, the applicant states: "There is no particular limitation to the communication network 4, [figures 1 and 3] such that it is possible to utilize CATV (cable television, community antenna television), communication satellite, public telephone network or wireless communication..." Therefore, the method of transmission is all-inclusive and does nothing to define the data or its components.

Page 9 of the specification describes "the intermediate transmission devices 2" in a similarly generic fashion. Figure 3 shows elements of device 2 but the description is similarly vague. Page 9, last paragraph indicates that devices 2 may be anywhere and are made up of "a display unit 203 for optionally displaying the required contents associated with the operations and a key actuating unit 202." Page 10 merely indicates that device 2 "is also provided with a

terminal device attachment portion 204 for attaching the portable terminal device 3... while the power supply terminal 206 is electrically connected to a power input terminal 307 of the portable terminal device 3." Page 11 merely indicates that these generic connections allow transmission of data and necessary power to both devices 2 and 3.

On page 12, last paragraph, the server device is described in part as containing "an assessment processing unit 105 for assessment processing for the user and an interfacing unit 106 for having communication with the intermediate transmission device 2." The function of the "assessment processing unit 105" is undefined. Neither description of the data being assessed nor any description of the resultant assessment is provided to give life and meaning to these terms.

On page 13, second paragraph, the applicant states: "a unique protocol or TCP/IP (Transmission Control Protocol/Internet Protocol) transmitting data generally used on the Internet by packets, may be used." This indicates that the applicant may employ an undefined "unique protocol" or a standard protocol such as TCP/IP. Because the data necessary to the invention is not clearly defined, the reader is unable to determine whether a "unique protocol" must be proprietary to achieve desired results or whether a standard protocol could really be used to achieve the same desired results. Even more problematic is that the desired results are unknown making further analysis virtually impossible.

Applicant improperly relies upon foreign [Japanese] documents H-3-139923 or 3-13922 for teaching how to make and use TwinVQ (page 14). The specification must fully explain TwinVQ by including the necessary text from these documents or should remove all mention of this technique. If this is a trademark, then, it must additionally be placed in all capital letters.

Page 14, second full paragraph fails to indicate what data is "collated". Supposedly, "The terminal ID data of the portable terminal device 3" is magically collated with "the terminal ID data of the portable terminal device that is currently able to use the information distribution system". How is a single device "currently able to use the information..." identified? Since page 13 implies use of the Internet, why would only one device (such as a computer) be able to use such information? The Examiner cannot resolve how "collation processing" is used (i.e. – "the results of collation") to decide what is "permitted". No reasonable relationship between collation of data and permission to use a terminal device can be derived from this description.

The last paragraph of page 14 (continuing to page 15) does not explain what sort of "assessment" is desired. The sentence "... the assessment processing unit 105 performs the processing of assessment of the amount in meeting with the state of use of the information distribution system by the user..." is incoherent. Neither the data being assessed, the process by which assessment is performed, what "amount" (amount of what?) is utilized nor the "state of use" are defined. The applicant throws about these terms without being giving any meaningful definitions thereof. The example given is nonsense: "the request information for information copying or electrical charging..." How can a request for "information copying" be treated as an alternative to "electrical charging" (charging a battery?). What does each of these things really mean?

The functionality of the "key actuating device 202" is unknown. On page 15, it is indicated that this is a necessary part of an "intermediate transmission device 2" and that the actuating device 202 must be "actuated by a user." However, page 9 (last 2 lines) indicates that unit 2 may use a "display 203" to optionally display "required contents associated with the

operations and a key actuating unit 202." Page 11 (last paragraph) indicates that units 202 and 203 may be omitted. The only portion that really looks like it contains keys capable of actuation by a user is 302. Some keys in 302 appear to be standard rewind, play, fast-forward, record and stop functions but the others are unknown and undefined. The functionality of 202 is confusing because it looks like a display but is described as a key.

No evidence that the applicant's invention can take a song and separate portions of the vocal information and accompaniment (vocal and instrumental) is presented by the applicant.

Page 18, second paragraph mentions "speech recognition translation unit 321" and "speech synthesis unit 322" but provides no details capable of actually achieving the desired results of either unit.

Page 19, last paragraph, indicates that "speech recognition translation unit 321 is fed with the vocal information transmitted along with the karaoke information after separation by the vocal separation unit 212 of the intermediate transmission device 2, and performs speech recognition of the vocal information." Again, no details for separating desired audio (a particular vocal) from other audio data is even offered by the applicant. Similarly, no details for performing speech recognition and translation to another language are offered. As a minimum, the drawings should show the steps of analysis necessary to input typical song data and extract specific parameters that can be analyzed by a computer to determine the desired results. Details must be provided giving a reasonably detailed explanation of how one of ordinary skill in the art could expect successful separation, recognition and translation.

Page 20, first full paragraph, indicates that "speech synthesis unit 322 first generates the novel vocal information (audio data) sung with the lyric of the as-translated second language,

based on the second language lyric information generated by the speech recognition translation unit 321." No details for performing such a desired manner of synthesis are provided. The apparatus and method for analysis as well as the parameters for modeling "original vocal information" must be provided. Similar details for synthesizing speech with musical properties must be shown that will allow utilization of "original vocal information." Further details are necessary to show "original vocal information" specifics with regard to music and speech. Such details must include time and frequency as it relates to musical pitch and vocal tract and/or other information that is specific to language idiosyncrasies. For example, in English, changes in pitch do not change the literally meaning of a word, but in certain Eastern languages (i.e. - Chinese) a rising or falling pitch could change the meaning of an otherwise identical pronunciation. Such details provide interesting challenges to the desired results of applicant's invention. However, no details are provided to address these or even more basic information.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-12 and 24-30 are rejected under 35 U.S.C. § 103 as being unpatentable over Stelovsky (5,613,909) in view of Bordeaux (4,852,170) and Lyberg (5,546,500).

As per claims 1 and 24, "information processing" is taught by both references:

"separating a first vocal information part in a first language and an accompaniment information part . . . generating first language lyric information" (Stelovsky teaches the separation of lyrics in figure 5 – see also column 8, lines 40-65 where he indicates the lyrics can be separately viewed separately from the music and accompanying video);

"translating the generated first language letter information into the second language letter information" (suggested in column 14, lines 21-22 using direct translation into another language); and

"synthesizing the second language lyric information" (suggested in column 14, lines 18-19 where he teaches that the audio track can be generated rather than recorded (e.g. using a speech generator.)).

It is noted that Stelovsky does not explicitly teach the use of "speech recognition" to perform translation. However, he teaches that translation is obvious in combination with a karaoke or other multimedia separation of data elements in order to facilitate education and/or entertainment. Bordeaux and Lyberg teach details for performing speech recognition and in column 12, lines 60-65, Bordeaux teaches that for use in foreign languages . . . a different natural language or orthographic translator would be employed. It would have been obvious for a person having ordinary skill in the pertinent art, at the time the invention was made, to combine a speech recognition based translator such as Bordeaux with the device of Stelovsky because Stelovsky specifically invites the use of future facilities (col. 14, line 11) which include

translation into other languages as noted above. Lyberg explicitly recites Bordeaux in column 1, line 24 and is utilized because he clearly teaches that it is known to combine synthesis with a translation device (see abstract) in such a way as to preserve prosodic information even after translation. Thus, Lyberg teaches that a combination of speech recognition for translation to a second language can be used to preserve stresses in the first language (abstract).

Claims 2-12 and 25-30 are rejected under similar arguments as presented above. Although the claims are unclear, it is presumed that the applicant is attempting to limit some of the synthesis related elements to preserving information gathered during analysis or recognition. This is taught by Lyberg who preserves prosody following recognition and translation for use in synthesis.

Bordeaux teaches details regarding the identification of phoneme strings (words) to be translated into any natural language. Lyberg teaches that such translation devices can separate the language and prosody in order to allow preservation of the prosody after translation.

Remarks

9. The applicant's remarks make generic statements that changes were made in response to the rejections. However, it is not seen how any of the changes actually overcome the deficiencies other than the typing error calling the separation unit a storage unit. The rejections have been modified according to the new phraseology in the claims.

The argument on page 16 against the prior art does not address the fact that Stelovsky shows that his device can separate lyrics from musical information for use in a karaoke device. This is significant because the applicant indicates in the specification that the invention is related

to a karaoke device but the claims are framed in a much broader sense to cover other uses of audio.

Stelovsky suggests translation into another language in column 14, lines 21-22 and both Lyberg and Bordeaux show that translation can be done using speech recognition. Stelovsky also teaches that his invention is designed to be flexible to incorporate future improvements. Specifically, he is able to allow programming to utilize recorded or generated audio to include a speech generator (col. 14, lines 11-20). Thus, the combination of references teaches that it is obvious to perform translation using text and/or speech recognition to improve speech comprehension and improve the usefulness (Industrial Applicability) of Stelovsky's system.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. **Any response to this action should be mailed to:**

Box AF
Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

TC2600 Fax Center
(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Knepper whose telephone number is (703) 305-9644. The examiner can normally be reached on Monday-Thursday from 07:30 a.m.-6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold, can be reached on (703) 305-4379.

Any inquiry of a general nature or relating to the status of this application should be directed to customer service whose telephone number is (703) 306-0377.

David D. Knepper
Primary Examiner
Art Unit 2654
January 15, 2003